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1922
no. 6
Engineering

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OFFICIAL PROCEEDINGS
Meeting of September 1922.

Volume XXI;
No. . . 6

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INCORPORATED OCTOBER 1913

Canadian Railway Club

MONTREAL

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Report of September Meeting and Notes on the Subject "RADIO"; also List of Subjects discussed by all Railway Clubs 1921—1922 Session,

and

Report of Annual Meeting of Railway Club Secretaries.

AUG 3 9 19

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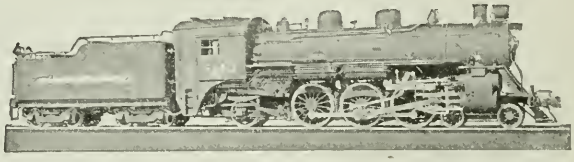

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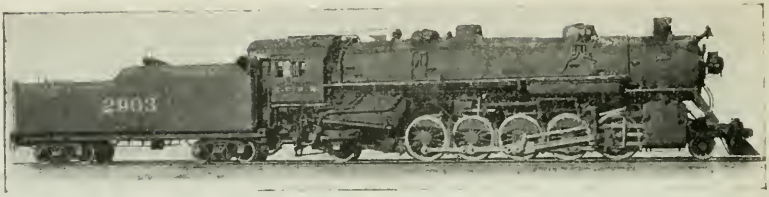

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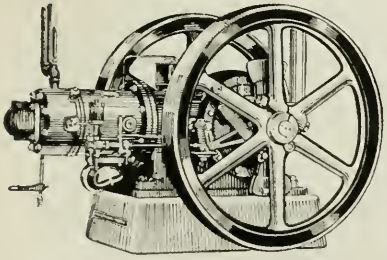

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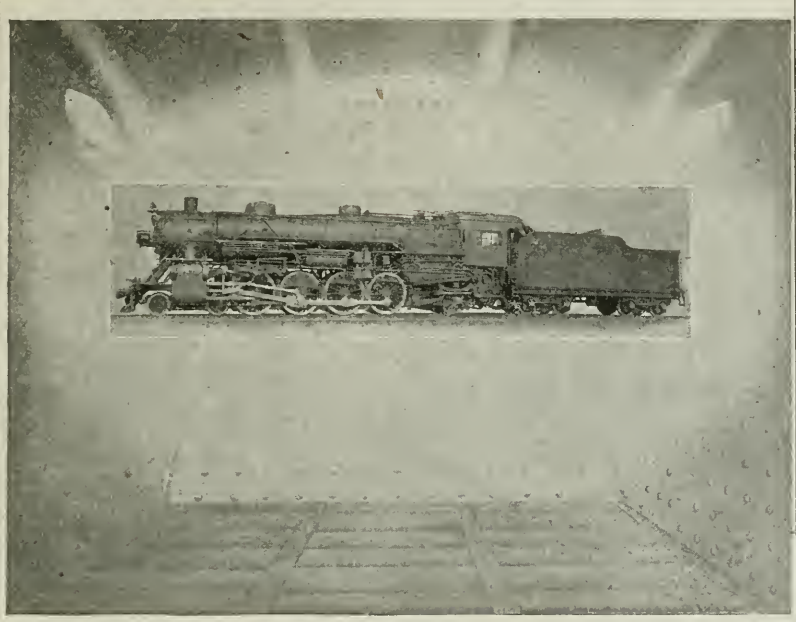

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Official Proceedings

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W. A. BOOTH, Secretary, 53 Rushbrooke Street, Montreal.

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PROCEEDINGS OF THE CANADIAN RAILWAY CLUB

Windsor Hotel, Montreal,
September 12th, 1922

Chairman, (Mr. G. M. Wilson.)

I will now call this meeting to order, and would ask you all to fill in the attendance cards, so that we may have a record of all present. As you are all aware the subject to-night is on "Radio," and we are going to deviate somewhat from the regular method of conducting the meeting, inasmuch as there are some concerts in the air, which Mr. Hawes would like to take in. They only last for about an hour, and have now been going for half an hour, and Mr. Hawes will now listen in and endeavour to give you the benefit of what is going on in the Radio Line. I am pleased to see such a large gathering here tonight. They say that railwaymen are always punctual—this meeting was scheduled for 8.30 p.m. and it is now 8.30—so we will live up to that reputation. I am sure we will hear something very edifying from Mr. Hawes on this Radio subject. Will Mr. Hawes kindly come forward?

Mr. W. T. Hawes:

Mr. Chairman and Gentlemen:—

You have, no doubt, all heard of Radio, at least in connection with the Broadcasting of musical programmes and speeches. To-night we shall have the pleasure of listening to Marconi's Radio Station in Montreal, and as their programme lasts from eight to nine only, and the hour is now eight thirty, I will switch on and let you hear a sample of what we have in Montreal.

(The Concert was given here.)

That is, gentlemen, a good sample of the Broadcasting we have in Montreal to-day, and, as it involves some little delay to tune to the American Stations, and hold them, we will content ourselves with what we have heard. The question is often asked, "What is the difference between Radio

and Wireless?'' In effect, they are the same thing, viz; the production, radiation and reception of high frequency currents through the ether medium, but popular literature and advertisements have drawn a distinguishing line between the two, so that to-day when speaking of wireless, we refer to the telegraphic method of communication, in the dot and dash Morse code, and by Radio we mean, the Broadcasting end, such as musical concerts, speeches, etc. Each have their own definite sphere. Telegraphy, for instance, will probably always remain for long distance communication and for working between ships and stations, especially where the language is different. Say, for instance, a Japanese ship with an English speaking operator. It is here that transmission by voice or Radio is at fault. However, the Radio field to-day is a tremendous one.

Commencing, as far as the public are concerned, last Fall, the Radio craze has taken hold of the people of the American Continent in a way that surpassed the automobile, bicycle, motion picture and other popular fancies. It sprang up overnight, as it were, due entirely to the erection of several Central Broadcasting Stations. Concerts were arranged consisting chiefly, in those days, of Gramophone music. To-day the Gramophone is heard only in second rate Stations, it has been replaced by actual talent. Naturally, with the tremendous buying of receiving apparatus, concerns sprang up like mushrooms, and the existing one worked night and day. It was nothing to see a line of customers waiting outside a Radio store like a line-up at the Theatre and, as a result, Radio Apparatus was at a premium.

This carried on until the early summer, and then the business slackened off somewhat, due to the fact that most of the Broadcast listeners were engaged outside. From reports of an investigation, there were, last winter, some two thousand three hundred dealers in Radio Supplies in New York City alone—true some were Fruit Stores and Boot-blacks that carried Radio as a side line, but they all made money while it lasted. With the summer slump, however, most of them fell out, with the result that there are only some two hundred in the same district to-day.

Probably one of the most scientific and useful applications of Wireless to-day is that of ''Direction Finding,'' and, in this connection, I have secured a Motion Picture Film from the Marconi Company entitled ''The Wonders of Wireless,''

and Mr. R. B. Burke of the Perkins Electric, Ltd., has been kind enough to bring a machine along. I will ask him to kindly show the picture here and we will also have more music.

(Motion Picture and Music at this stage.)

Gentlemen, the musical programme is finished now and so is the picture.

I would like to kill a few popular ideas that have come about through cheap advertising and irresponsible literature, and one of them is, that it is practically impossible to sit in one's room with a cheap receiving set, turn a knob and flood the room with beautiful music, from any part of the world, using the bed spring and stove pipe as an aerial. Radio receiving has not yet reached that degree of perfection. To get as far as 500 and 1,000 miles away, it is necessary to erect a good Aerial, instal a good set and do a good deal of tuning, to get the best results. A Set of this description would cost in the region of two hundred to three hundred dollars.

Another very misleading thing is the reports of costs of various items that appear in local newspapers. Most of these articles have their origin in the U. S., and the difference between the cost here and in the U. S., in most cases, is considerable.

Again, it is hardly possible to tune in to the U. S. Stations with the average set in the day-time. The best reception is done at night, when the range of a transmitting Station is three or four times as great as during the day.

This is due to a combination of causes—rays from the sun are considered to nill signals during the day, whereas at night this influence is removed.

Since the regular programme of the Meeting has been altered somewhat, probably Mr. Wilson would like to take up his part of the work now.

MEMBERS PRESENT

Wilson, G. M.	Bergen, F.	Cathcart, H. W.
Ackerman, E.	Besse, R.	Chaffee, A. B.
Aitken, W.	Boughton, L.	Clendenning, J. R.
Allan, T. A.	Brazier, G. W.	Clibbon, A. T.
Atkinson, F.	Broadbent, J. F.	Clibbon, R.
Armstrong, R.	Broadrup, M.	Coleman, M. T.
Barclay, J.	Brown, L.	Comley, W. T.
Barrett, C. W.	Buckland, A. W.	Cookman, R. C.
Baxter, E.	Cameron. H. D.	Crockett, W. B.
Beahan, J. P.	Candlin, A. J.	Crumpton, A.
Benard, J. B. H.	Candlin, J. E.	David, C. H.

Decelles, L. G.
De la Cour, P. E.
Deslieres, R.
Desparois, J. D.
Dohm, J. T.
O'Donnell, M. J.
Dougall, J. H.
Dube, J. O.
Dutton, H. R.
Eaton, J.
Eley, E.
Ellis, J. G.
Fielding, W. G.
Firth, O. M.
Fraser J.
Galvin, C. W.
Garden, J. C.
Gardner, K. V.
Gibson, L.
Going, A. S.
Goldstraw, W.
Grant, F. L.
Guest, A.
Hall, G. H.
Hamm, W. C.
Harrigan, H. C.
Harrison, E. V.
Hawes, W. T.
Hearn, J. H.
Henry, C.
Herring, R. L.
Higgins, G. C.
Hopperton, L.
Horsfall, T. C.
Howard, W.
Inns, G. A.
Irvine, T.
Irving, R.
Irving, R. S.
Ivory, A. M.
Jackson, J. R.
Jacques, A.
Kelly, E. A.
Kelly, E. J.
Kennedy, J. J.
Kinnear, D. M.
Lecavalier, A.
Linagh, R. K.
Lockhart, H. R.
Lowe, W. S.
Luker, G. C.
Mackie, R. S. D.
Macpherson, A. D.
Macpherson, B. M.
Macpherson, J. B.
Macnab, E. S.
McNab, W.
Martin, W. L.
Matheson, A. G.
Miller, M. J.
Milne, D. W.
Mimms, A. E.
Monks, T. H.
Moore, E.
Moore, F. W.
Morgan, W.
Muir, T. G.
Murphy, J. W.
Musgrove, G. W.
Myles, C.
McAllister, W. J.
McCorry, F. E.
McAlpine, A.
McDonald, A.
McEwan, W. H.
McHattie, F.
McHattie, G. A.
McHattie, T.
McHattie, W. J.
McLennan, K. R.
McNab, W.
Neale, G.
Nicholson, G.
Noakes, R. J.
Nowe, T. S.
O'Brien, J.
O'Donnell, M. J.
Palethorp, J. L.
Palmer, J. E.
Paul, J.
Pemberton, F.
Peterson, W. A.
Phillips, F.
Pirrie, W.
Playfair, J.
Pope, A.
Pope, J. G.
Prevost, L. E.
Proudfoot, D. G.
Prouse, W.
Redmond, W.
Reynolds, P.
Richardson, S.
Rickard, E. M.
Robb, G. W.
Robb, J. D.
Robinson, W.
Robinson, H. A.
Robinson, W. A. H.
Ross, J. D.
Royer, C.
Ryan, J. P.
Scott, A. N.
Scudamore, R. S.
Sheridan, W. P.
Sleigh, T.
Smeaton, J. N.
Smith, J. L.
Smith, F. G.
Spence, J. H.
Starke, A.
Starkey, J. B.
Summers, W. S.
Tate, W. F.
Taylor, J.
Taylor, S. G.
Tench, S. W.
Thorburn, C. D.
Tinkler, J. E.
Tourville, M.
Towne, A. C.
Viberg, E. R.
Vincent, P. S.
Walker, R. C.
Warnock, C.
Warnock, R. N.
Wilson, W. P.
Wilson, G. E.
Whitcomb, F. O.
Whiting, H. F.
Wheatley, J. H.
Webb, C. J.
Webb, W. C. H.
Zehner, J. M.
Booth, W. A.

And Many Others.

Mr. G. M. Wilson:

There are a number of cards yet to be filled in. If those who have come in since the meeting started will kindly fill in

the cards, it will be much appreciated. The proceedings of the May meeting have been forwarded in the mail to you, and I will therefore go on to the next thing in order, the remarks of the President. Well, as regards that part of my duties, I think I can claim to be a man of few words, and shall have little to say, although our past President's have set a mark and at such a pace, that I fear it will be hard work to overcome it. The membership of our Club is increasing by leaps and bounds —if that is any criterion of success, and success, gentlemen, is obtained only by three things, first, work, second, Work, and third, WORK. It is not by depending on the Executive altogether, but on the members as well, and I believe that every member of the Canadian Railway Club is a worker. I do not think there is a drone in it, and there is a membership of 1525 in the club—a club that stands unique in this country. There is only one Club of that name in Canada, a club of which we are all proud to be members. We have listened to radio—I do not know where it comes from, but I understand that it is from about half a mile away. It is really wonderful, and as I listened, I thought how great a thing it would be for a shop foreman to be equipped with a radio device, (as I believe they can be fixed to the body), thus making it possible for him to connect to a second person and give him what instructions he wishes, such as how a certain engine should be handled, etc. There is no doubt we shall learn a great deal more about this newly discovered force as time goes on. Sooner or later I believe we shall see wonders performed by radio, and that the vast amount of experimental work being carried on at the present time will then have its fruition. Mr. Hawes is now willing to answer any questions you gentlemen may desire to ask, but before any are submitted, the Secretary will read the announcement of new members.

NEW MEMBERS

Armstrong, R., Chief Chemist, Canadian Steel Foundries, Longue Point Works, Montreal.

Broadbent, J. F. Treas., Moore Broadbent Co. Ltd., Montreal.

Brayton, W. S. Carpenter, Can. Pac. Rly., Montreal.

Decelles, J. G. A., Tel Opr., C. P. R. Co. Telegraph, Montreal.

Dube, J. Q. Foreman, Loco. Paint Shop, C.P.R. Angus, Montreal.

Fairchild, R.H. Chief Clerk, Can Steel Tire & Wheel Co., Montreal.

Geddes, Roy, Treas, Milton Hersey Company, Montreal.
Hughes, A. D., Chief Clerk, Can Steel Foundries, Longue Pointe Works, Montreal.
Hutchins, G. R. Manager, Mount Royal Metal Co., Montreal.
Jenner, W. C., Loco Engr., G. T. Rly., Montreal.
Kells, J., Electrician, C.P.Rly Co., Angus Shops, Montreal.
Kerr, W. C., Engineer, Grand Trunk Railway, Montreal.
Kilays, C. A., Foreman Upholsterer, C.P.R. Angus Shops, Montreal.
Martin, W., Machinist, C. P. Rly., Angus Shops, Montreal.
Moss, A. E., Clerk, Office of Aud. of Rev. G.T.R., Montreal.
Muir, Chemist, Can. Steel Foundries, Longue Pointe Works, Montreal
Patterson, W R., Chief Clerk, Aud. of Disbursements, C.P.R. Montreal.
Rickard, E. M. Motorman, Montreal Tramways Co., Montreal.
Sheridan, W. P., Rate Clerk, G.T.R., Claims Dept., Montreal.
Smith, L. G., Mech. Supt., Vapor Car Heating Co., of Canada, Montreal.
Walmsley, W., Asst. to Aud. of of Rev, G.T.R., Montreal.
Walmsley, W. T., Auditor, Can. Nat. Express Co., Montreal.
Whiting, H. F., Asst. Chief Clerk, Claims Dept., (Auditor of Revenues) G.T.R., Montreal.
Williams, S. F., Supt. Can. Steel Tire & Wheel Co., Montreal.

Chairman:

You have heard these names read gentlemen, and all in favor will please signify in the usual manner. (Carried.) The meeting is now open, and to start the discussion I would like to ask Mr. Hawes what is the difference between Radio and Wireless.

Mr. Hawes:

Mr. Chairman, there is scarcely any difference in principle, as was explained earlier in the evening, the difference lies in popular application, that is, Wireless usually means telegraphy and Radio the Broadcasting of music.

Mr. E. S. N. Macnab:

In order to help the discussion, I will ask Mr. Hawes if the arrangements by which you can plug into electric sockets in a room and listen in to broadcasting is a success? Have you found that a loop aerial in the shape of a diamond and connected up to instruments very successful? I believe that it would "boost" Radio in our cities.

Mr. Hawes:

The arrangement for plugging into a socket is quite a success, in fact, in some cases, they are better than an outside Aerial. They originated from the invention of Mr. Bill Dubilier, of New York, who was so disgusted at the thought of having to string up an aerial that he set to work and developed the Plug Aerial, known to the trade as the "Ducon;" an abbreviation of the words, "Dubilier Condenser."

The loop referred to is also a success and is used chiefly in conjunction with Radio Frequency Amplifying Sets. One advantage is, they are easy to instal, and another is that static is less bothersome with them as compared to an outside Aerial.

Mr. Higgins:

I have seen in some of our illustrated magazines that Radio has been equipped to a train, I would like to know what success has been obtained.

Mr. Hawes:

I will pass the question, as I have no first-hand knowledge of just what has been done in connection with moving trains. This Spring the Marconi Co., conducted some experiments in Winnipeg and other tests are now being made in Toronto, on a C. N. R. train, but with what results I do not know. Both France and Germany seem to be experimenting along these lines also.

Mr. G. M. Wilson:

To keep in touch with a train is it not necessary to adjust your instruments as the distance becomes greater?

Mr. Hawes:

No, the wave length, and it is the wave length to which the machine is tuned, is not affected by distance, it will get weaker as the distance is increased, but not out of tune.

Mr. J. Wiley:

I would like to ask Mr. Hawes if any success has been obtained with the Armstrong Super Regenerative Receiver?

Mr. Hawes:

I do not believe Mr. Armstrong has had the same success with his Receiver as Mr.————has had with his old Armoured Car, the last time I saw him in action. However, this scheme has given some success, and if perfected should be a wonderful forward step in Radio receiving. At the present

moment there is some doubt about it and it is far from being stable.

Mr. G. M. Wilson:

I notice you use some terms in this discussion with which some of us are not familiar. Can you not make it more explicit; in other words, can you not explain the rudiments of radio in simple language?

Mr. Hawes:

It is so complicated that I am afraid I cannot do so here. To begin from the beginning would need a book as big as the Bible. However, we are all familiar with the analogy of throwing a stone into a pool of water and watching the waves radiate from the disturbed spot, in ever-increasing and weakening circles. This is crudely how wireless waves are propogated. The ether is disturbed by a strong electrical current, this disturbance is radiated into space, in circles, and affect the receiving aerial and instruments which are designed to produce audible sounds from the small disturbances received.

Mr. G. M. Wilson:

Has the humidity of the air got anything to do with Radio, to the retarding of it or does it make it more distinct?

Mr. Hawes:

The range of a station is considerably greater at night than in the day-time, but this is most likely due to the absenie of the sun's rays than the humidity of the air.

Mr. Macnab:

I would like to ask if Mr. Hawes can tell us the greatest distance that the use of Radio has been effected.

Mr. Hawes:

There is no doubt that the earth can be easily circled by a large station. Tests were made from Croydon, England, to Australia, about 12,000 miles. Three or four thousand miles is everyday working distance for Transatlantic stations, with powers up to 200 K.W. I would like to mention here that last winter a young chap in Toronto, call 3 B.P., sent a message from Toronto to Scotland with a power of only 1-2 K.W.. This is particularly striking when compared with the old station in Montreal that used to use 30 K.W. to reach Quebec.

Mr. H. R. Naylor:

I would like to know what is the limiting influence in long distance work. Is it sending or receiving?

Mr. Hawes:

A combination of both, I think. The waves die out as they travel over the surface of the earth, and therefore need more sensitive sets to receive as the distance increases. There is no limit if you have the power.

Mr. R. J. Needham:

I would like to ask what method is or has been employed in keeping a secret of any message for the public in transmission?

Mr. Hawes:

I do not believe there is any such arrangement, the most effective is to use a secret code. It might also be done by high speed transmission, although neither of these are absolutely secret, the message is liable to be picked up by anyone.

Mr. Grant:

Will the speaker tell us what the difference is between sending a message through the air and through the earth, it has been claimed it can be done either way, and if there would be the same interruptions?

Mr. Hawes:

That, gentlemen, is too much for me, I must admit. The old school claimed the signals travelled through the air—others, half through the air and half through the earth. Then a chap named Rogers came along with his underground theory. I'm neutral. Some tests were made with Aerials above, on and under the earth and the signals were about the same.

Mr. G. M. Wilson:

There was one thing I was struck with in Mr. Hawes' remarks—that humidity has a good effect on wireless. I had the good fortune to listen to wireless for the first time in the Province of Ontario. In that Province it had a "dry" grating sound, whilst what we have heard to-night was quite clear, having a decidedly mellow sound. Perhaps the "humidity" of this Province produces the mellow effect. (Laughter.)

Mr. W. Smythe:

On ordinary ship sets, I understand, they have valves and crystal detectors. What is the difference?

Mr. Hawes:

The first difference is cost, the cost of one is $9.00, the other 25c. There is a great difference in the range, tone, and work they perform. The valve made possible the transmission

and reception of voice by Radio, it also permits of cascade amplification, something not possible with the crystal.

Mr. T. Hall:

I would ask Mr. Hawes the difference between wireless and wired wireless?

Mr. Hawes:

I thought someone would get me if they kept up long enough. However, wireless is the radiation of messages without any conducting wires, whereas wired wireless is dependent upon some conducting medium, such as, transmission lines for power, etc. Wired wireless has made possible the sending a multiple message over the same wire at the same time.

Mr. N. Ross:

When Signor Marconi was in New York did we not read that he discovered some directional wireless that was a success?

Mr. Hawes:

If so, he has not put it on the market and has not issued anything on it.

Mr. F. Moore:

Some of our wireless operators on transatlantic ships do not always tell the truth. A party of inquisitive ladies asked him one day what he could hear, and he said that he could always hear what was going on in all the cabins of the ship—when he looked around they were gone; that was all there was to it. (Laughter).

Mr. A. Crumpton:

I am sure that every member of the Club has enjoyed the talk to-night on "Radio," and the music, demonstrations, etc., have all served their purpose, and I have very great pleasure in asking that a vote of thanks be passed to Mr. Hawes for his lecture this evening.

Chairman:

Will someone kindly second that. (Seconded by Mr. Moore). Moved by Mr. Crumpton and seconded by Mr. Moore that a vote of thanks be given to Mr. Hawes for the very interesting lecture he has given us to-night.

Chairman:

Before we conclude I wish to announce that at next month's meeting a paper will be read on "Air and Air Compressors," and will deal with "the Elements of Economy in the use of Compressed Air," a very vital subject. The speak-

er on that occasion will be Mr. Wm. Carter, A.S.M.E., of the Canadian Ingersoll Rand Co., and the lecture will be illustrated by stereopticon views. Mr. Carter is well versed in his subject, and there will be lots of scope for discussion. I trust that he will have as large an attendance as has been here to-night. I can assure you that it is a pleasure to see so many here. I thank you for the kind attention you have given the speaker to-night, and also the support you have given me on my initial appearance as your new President for the coming year, and I trust that co-operation will continue. Our Secretary has arranged some light refreshments and these will be served in the adjoining room as you retire.

Meeting adjourned.

F. A. BROOKS
DIED
AUGUST 18th 1922

T. DESORMEAUX
DIED
SEPTEMBER 7th 1922

G. E. A. LETOURNEAU
DIED
AUGUST 2nd 1922

W. NICHOLSON
DIED
MAY 30th 1922

RAILWAY CLUB SECRETARIES MEETING

THE SOCIETY OF RAILWAY CLUB SECRETARIES held its annual meeting Thursday, June 15th, 1922, at Atlantic City, N. J., with the following representation:

New York Railway Club:	Mr. Harry D. Vought,
Central Railway Club	Mr. Daniel M. Brady, proxy.
New England Club:	Mr. W. E. Cade, Jr.,
Railway Club of Pittsburgh:	Mr. J. D. Conway,
Canadian Railway Club:	Mr. W. A. Booth.

Mr. Cade as Chairman, presided and Mr. Vought performed his duties as Secretary-Treasurer.

No meeting had been held in 1921 owing to the postponement of the Mechanical conventions and the Minutes of 1920 were, therefore, at this time the subject of approval without being read as members of the Society received a copy of same in advance.

It was agreed, on motion of Mr. Brady, that the various Clubs be asked to consent to contribute an assessment of $15.00 each with which to meet current expenses.

In addition to discussing matters in reference to the inter-relations of the various railway clubs and methods and practices of the members of the Society in conducting their work, further consideration was given to the idea of broadening the scope of the Society by organizing a new Association, of which it would be the nucleus, and probably a Section, with a view of having Secretaries of all railroad organizations members thereof.

To Mr. Vought was assigned the duty of preparing a plan and submitting the same to some future meeting of the Society.

The Secretary, as usual, was authorized to compile a complete Index of papers and authors and appears in this issue.

No further business requiring attention, the Society

proceeded with the election of officers with the following result:

Chairman: Mr. W. A. Booth,
Vice-Chairman: Mr. Bruce V. Crandall,
Secretary-Treasurer: Mr. Harry D. Vought.

The Secretary-Treasurer having been authorized to pay all proper bills and the business before the meeting having been finished, the Society, subject to any further call, adjourned for a round table luncheon in which a number of high officers of railroad clubs represented in the Society participated.

The occasion proved of interest and enjoyment to all concerned, and there was an interchange of ideas and opinions covering Club work that gave to all present new incentive with respect to the well being and development of all Clubs.

INDEX OF PAPERS AND THEIR AUTHORS

PRESENTED BEFORE RAILWAY CLUBS DURING THE SEASON OF 1921-1922.

COMPILED BY THE SOCIETY OF RAILWAY CLUB SECRETARIES

NEW YORK RAILROAD CLUB

Harry D. Vought, Room 315, 26 Cortlandt St., New York City
Secretary

Sep. 16, 1921.—"What Fixes the Level of Wages?" By Dr. *Charles A Eaton, Plainfield, N. J.*

Oct. 21, 1921.—"Optimism by Various Speakers." "The Value and Effect of a Smile." By *Charles C. Castle.* "Optimism and Cheerfulness." By *Charles R. Ellicott.* "To Smile is Easy." By *Col. Charles Hine.* "The News and the Editorial." By *Frank W. Noxon.* "Good Reasons for Smiles." By *Samuel O. Dunn.* "Thoughts that Make Smiles." By *Daniel M. Brady.* "All in a Point of View." By *Dr. T. Kennard Thomson.* "Loss and Damage to Freight." By *Thomas A. Ward.*

Nov. 18, 1921.—"Passing the Buck—Perhaps the Dividend." By *Howard Elliott, Chief Editor, New York Traffic Club Bulletin.*

Dec. 16, 1921.—Third Annual Dinner. Addresses by the *Hon. Ben. W. Hooper, Vice-Chairman, U. S. Labor Board, and Toastmaster Hedley.*

Jan. 20, 1922.—"Conditions Which Effect the Head of the Rail." By *James E. Howard, Engineer Physicist, Interstate Commerce Commission.*

Feb. 17, 1922.—"Australia and its Railways." By F. M. *Whyte.*

Mar. 17, 1922.—"Store Door or Direct Delivery." By. *Col Charles Hine, Robert E. Thayer, European Editor, Railway Age; J. Shirley Eaton, Federal Trade Commission; W. J. L. Banham, G. T. M., Otis Elevator Co.; T. C. Powell, V. P., Erie R. R.; Willard C. Brinton, Consulting Engr., Terminal Engineering Co.; B. F. Fitch, Motor Terminals Co.*

Apr. 21, 1922.—"The Railway Target—How to Hit the Bull's Eye." By *Harrington Emerson, Engineer.*

May 19, 1922.— "Some Recent Developments in Gasolene Driven Passenger Rail Cars." By *W. L. Bean, Mechanical Assistant to President, N. Y. N. H. & H. R. R.*

CENTRAL RAILWAY CLUB

Harry D. Vought, 26 Cortlandt St., New York City
Secretary-Treasurer

Aug. 25, 1921.—"Proper Inspection and Reporting of Work by Enginemen—With Relation to Enginehouse Repairs." By *T. J. Hartnett, R. F. of E. D. L. & W. R. R.*

Nov. 10, 1921.—Thirty-first Annual Dinner. Addresses by *Arthur J. Baldwin, V. P., McGraw-Hill Co. and the Hon. Charles F. Moore of New York, Toastmaster.*

Jan. 12, 1922.—"What is Your Locomotive Policy?" By *George M. Basford.*

Mar. 9, 1922.—"What Shop Equipment Means to a Railroad." By *V. Z. Caracristi.*

May 11, 1922.—"Why Engines Fail." By *F. C. Pickard, M. M., D. L. & W. R. R.*

WESTERN RAILWAY CLUB

Bruce V. Crandall, 605 N. Michigan Ave., Chicago, Ill.
Secretary

Sep. 19, 1921.—"A Shipper's View of the Evolution of Transportation and its Effect on Steam Railways." By *George C. Conn.*

Oct. 17, 1921.—"Car Owners' Responsibility." By *C. J. Wymer.*

Nov. 21, 1921.—"Does It Pay to Repair Foreign Freight Cars?" By *N. D. Ballantine.*

Dec. 19, 1921.—"Regulation—Super-Regulation—Strangulation." By *Slason Thompson.*

Jan. 16, 1922.—"Education." By *C. G. Juneau.*

Feb. 20, 1922.—"Some Factors in the Business of Owning Locomotives." By *C. B. Peck.*

Mar. 20, 1922.—Discussion of "Some Factors in the Business of Owning Locomotives."

Apr. 17, 1922.—"Locomotive Types from a Transportation Viewpoint." By *J. F. Porterfield.*

May 15, 1922.—Thirty-seventh Annual Meeting and First Annual Dinner. "The Aftermath of Federal Control." By *James C. Davis, Director-General, R. R. Administration.*

NEW ENGLAND RAILROAD CLUB

Wm. E. Cade, Jr., 683 Atlantic Avenue, Boston, Mass.
Secretary

May 10, 1921.—"New England: Its Lakes, Rivers, Mountains, Seashore and History." By *Eugene N. Jones, Official Photographer, Boston & Maine R. R.*

Oct. 11, 1921.—"Organization, Mobilization and Activities of the Canadian Overseas Railway Construction Corps." By *F. L. Wanklyn, General Executive Assistant of the Canadian Pacific Railway.*

Nov. 8, 1921.—"The Activities of the American Railway Association," Address by *E. J. Pearson, President, N Y. N. H. & H. R. R.*

Dec. 13, 1921.—"Rebuilding Old Locomotives." By *Carl B. Smith, Mechanical Engineer, Boston & Maine R. R.*

Jan. 10, 1922.—"The Department of Tests of the New Haven Railroad" By *H. P. Hass, Engineer of Tests, N. Y. N. H. & H. R. R.*

Feb. 14, 1922.—"Organization and Modern Handling of Package Freight Through Freight Houses." By *G. Marks, Assistant to General Manager, N. Y. N. H. & H. R. R.*

Mar. 14, 1922.—Thirty-ninth Annual Meeting, Election of Officers and Reports, also address on "A Movement that Stands the Test of Time" By *John F. Moore, Associate General Secretary, The International Committee of the Y. M. C. A.*, and address on "Visualizing Railroad 'Y' Activities" By *A. P. Gillette, Executive Secretary, Boston & Maine Branch, Y. M. C. A.*

Apr. 11, 1922.—Annual Dinner and Entertainment.

May, 9, 1922.—"Maine—the Sportsman's Paradise." By *E. S. Jones, Official Photographer, Boston & Maine R. R.*

ST. LOUIS RAILWAY CLUB

B. W. Frauenthal, Drawer 24, M. & P. P., St. Louis, Mo.
Secretary-Treasurer

May 6, 1921.—"Thunder Bay to the Skeena River." By *Capt. J Milton State, connected with the Bureau of Commercial Economics at Washington, D. C.*

June 10, 1921.—"For Labor Unions: A Receipt for Immortality."

July 8, 1921.—"Engineering Revision in Safety." By *C. P. Tolman, President National Safety Council.*

Aug. 12, 1921.—"An Adventure in Prognosis."

Sep. 9, 1921.—Addresses by *Hon Arthur M. Hyde, Governor of Missouri; Cleveland A. Newton, Congressman 10th District of Missouri; Henry W. Kiel, Mayor of St. Louis, and Victor J. Miller, Police Commissioner of St. Louis.*

Oct. 14, 1921.—"Something of the History of the Railroads of Missouri and Some Sidelights of the 1920 Transportation Act." By *Edward J. White, Vice-President and General Solicitor, Missouri Pacific R. R., St. Louis, Mo.*

Nov. 11, 1921.—"Armistice Day." By *Jerome F Duggan, American Legion, St. Louis, Mo.* "Traffic and Transportation." By *George T Atkins, Freight Tarffic Mgr., Missouri, Kansas & Texas Ry., St. Louis, Mo.*

Dec. 9, 1921.— "The City Court and Its Work." By *Judge George E. Mix, St Louis, Mo.* "Solving the Flood Problem of the Lower Mississippi." By *John A. Fox, of Chicago.*

Jan. 13, 1922.—"Electrification and Its Relation to Steam Railroads." By *N. W. Storer, General Engineer of the Westinghouse Electric Manufacturing Co., Pittsburgh, Pa.*

Feb. 10, 1922.—"Insights and Outlooks." By *Frank B. McMillin, Vice-President and General Manager, the Hydraulic Press Manufacturing Co., Mount Gilead, O.*

Mar. 10, 1922.—"The State Mounted Police" By *Frank L. Mather, of the Illinois State Auxiliary Committee, and Alfred Wieck, a former member of the Michiga nState Police.* "Radio-Telephony." Demonstration by *E. C. Snowdon, with the Manhattan Electric Supply Co., Radio Department.*

Apr. 14, 1922.—"Field for a Railroad Bloc." By *Z. G. Hopkins, Assistant to Chief Operating Officer of the M. K. & T. R. R.*, and Motion Pictures, "Manufacture of Armco Ingot Iron and Special Steel Sheets."

THE RAILWAY CLUB OF PITTSBURGH

John D. Conway, 515 Grandview Ave., Pittsburgh, Pa Secretary

Sep., 1921.—"Railroading—From an Inside and Outside Point of View." By *A. W. Thompson, President, Philadelphia Co., Pittsburgh, Pa.*

Oct., 1921.—Annual Meeting, Election of Officers and Entertainment.

Nov., 1921.—"Review of Staybolt Art." By *C. A. Seley, Mechanical Engineer, Chicago.*

Dec., 1921.—"Mining, Manufacture and Uses of Asbestos." By *H. P. Rankin, Manager, Pittsburgh Branch, Johns-Manville, Inc., Pittsburgh, Pa.*

Jan., 1922.—"Automatic Train Control." By *L. V. Lewis, Train Control Engineer, Union Switch & Signal Co., Swissvale, Pa.*

Feb., 1922.—"Railway Transportation in the A. E. F." By *Col. H. C. Nutt, President and General Manager, The Monongahela Railway Co., Pittsburgh, Pa.*

March, 1922.—"Iron, the Most Important Metal in the World." By *Dr. John S. Unger, Manager Central Research Bureau, Carnegie Steel Co., Pittsburgh, Pa.*

April, 1922.—"Gas Masks, Ventilation, etc." By *A. C. Fieldner, Supervising Chemist and Superintendent of the Pittsburgh Experiment Station, United States Bureau of Mines, Pa.* "Mexico and its Oils." By *N. A. C. Smith, Pittsburgh Experiment Station, United States Bureau of Mines, Pittsburgh, Pa.*

May, 1922.—"Radium." By *L. F. Voght, Works Manager, Standard Chemical Co., Pittsburgh, Pa.*

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB

A. J. Merrill, P. O. Box 1205, Atlanta, Ga.
Secretary

Sep. 15, 1921.—"Loss and Damage to Freight and How to Prevent It." By *Joe Marshall, Special Representative, Freight Claim Prevention, American Railway Association.*

Nov. 17, 1921.—"Manufacture of Charcoal Iron and Charcoal Iron Boiler Tubes." By *W. H. S. Batesman, Philadelphia.*

Jan. 19, 1922.—"Locomotive Feed Water Heaters." By *H. B. Oatley, Vice-President, The Superheater Co.*

Mar. 16, 1922.—"The Successful Operation of a Superheated Locomotive," with a short talk on their lubrication. By *A. D. Pendergast, Lubricating Engineer, Texas Company, Atlanta, Ga.*

May 16, 1922.—"Supervision." By *J. L. Wilkes, General Manager, Jacksonville Terminal Co., Jacksonville, Fla.*

CANADIAN RAILWAY CLUB

W. A. Booth, 53 Rushbrooke St., Montreal.
Secretary

May 10, 1921.—Annual Meeting, Election of Officers, Smoker and Entertainment.

Sep. 13, 1921.—"Train Despatching by Telegraph versus Telephone." By *W. J. Camp, Assistant Manager, Canadian Pacific Railway Telegraphs, Montreal.*

Oct. 11, 1921.—"Studies in Corrosion of Iron and Steel." By *Dr. Allerton S. Cushman, Physical Director of the Institute of Industrial Research, Washington, D. C.*

Nov. 8, 1921.—"The Future of Railroading is Electrification." By *W. R. Stinemetz, Manager, Heavy Traction, Railroad Dept., Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.*

Dec. 13, 1921.—"The Difficulties of Railroad Transportation in Soviet Russia." By *E. A. MacMillan, Superintendent of Atlantic City & Shore R. R., Atlantic City, N. J.*

Jan. 10, 1922.—"Prevention of Freight Loss and Damage." By *Joe Marshall, Special Representative, Freight Claim Prevention, American Railway Association, Chicago, Ill.*

Feb. 14, 1922.—"Education in its Relation to Efficiency." By *A. J. Felton, Alexander-Hamilton Institute, Toronto, Ont...*

Mar. 14, 1922.—"The Railway Chief Clerk—His Problems, Duties and Required Qualifications." By *H. A. Balkwill, Car Accountant, Grand Trunk Railway, Montreal, Que.*

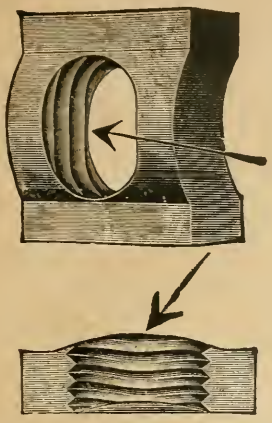
Apr. 11, 1922.—"The Railway Commission and the Nature of its Work." By *S. J. McLean, Assistant Chief Commissioner, Board of Railway Commissioners, Ot'awa.*

THE ANNUAL MEETINGS OF THE SOCIETY ARE HELD IN CONNECTION WITH THE CONVENTIONS OF THE MECH. DIV., AMERICAN RAILROAD ASSOCIATION

Chairman, W. A. Booth, *Canadian Railway Club*

Vice-Chairman, Bruce V. Crandall, *Western Railway Club*

Secretary-Treasurer, HARRY D. VOUGHT, *New York Railroad and Central Railway Clubs, New York, N. Y.*



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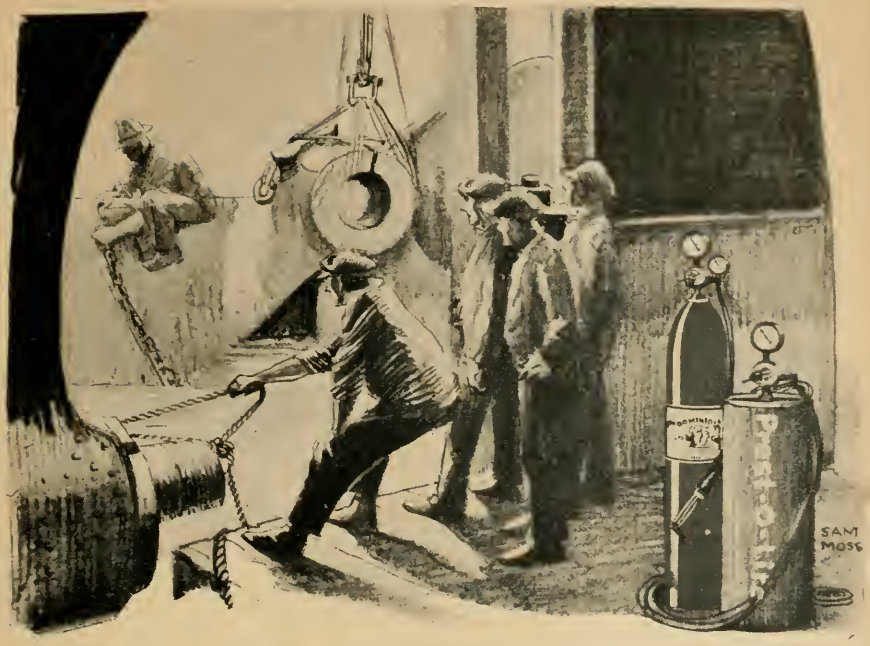

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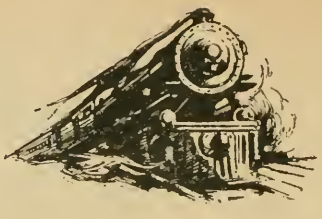

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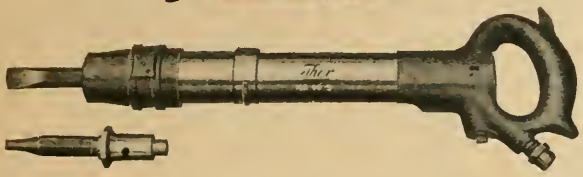

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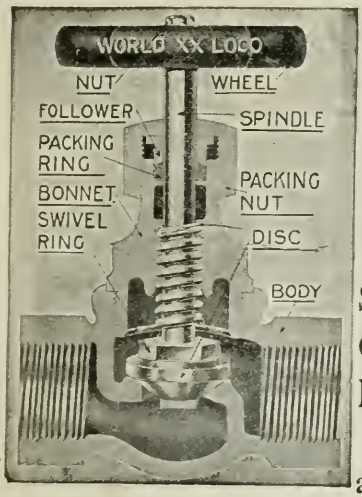

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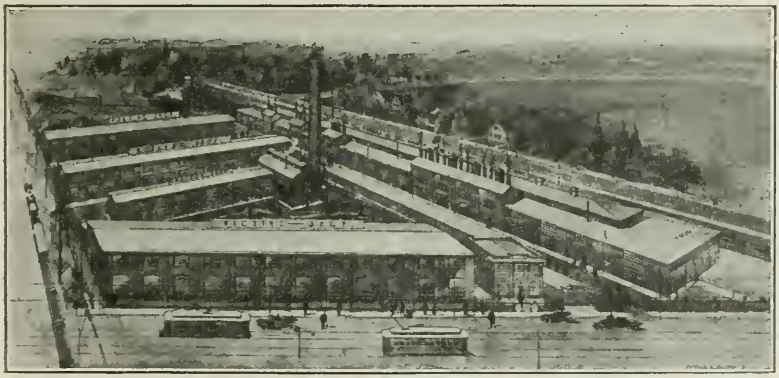

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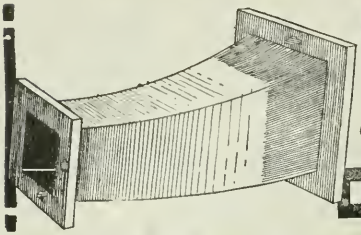

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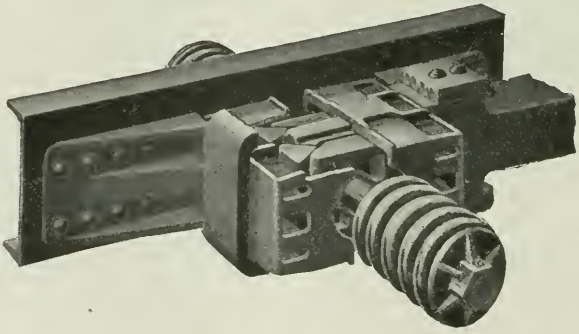

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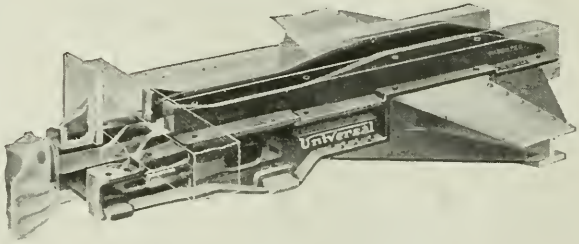

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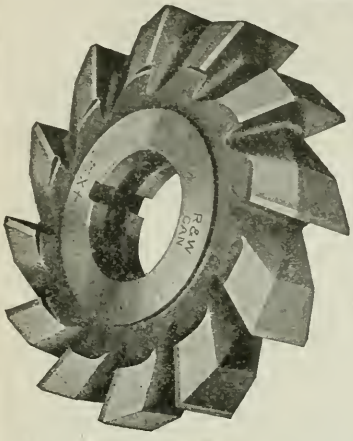

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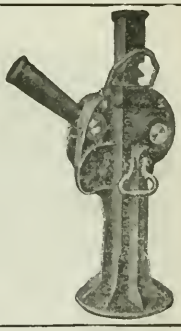

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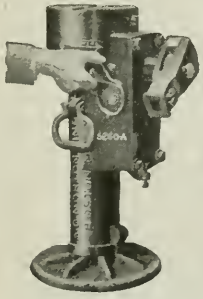

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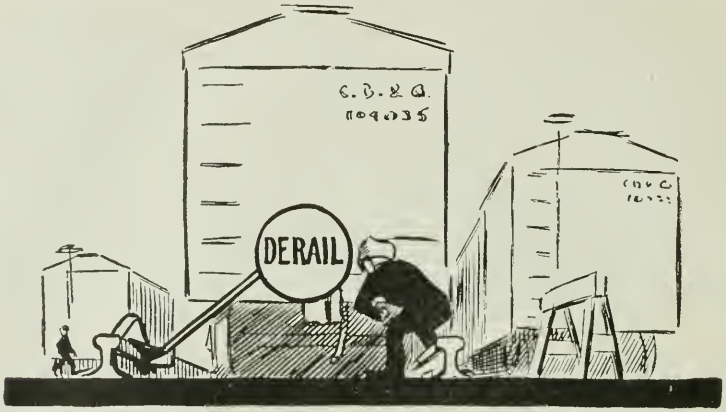

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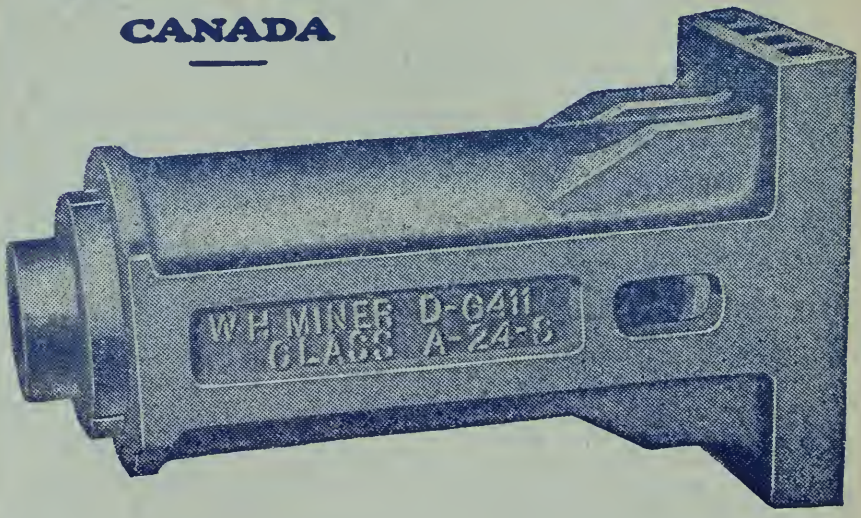

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